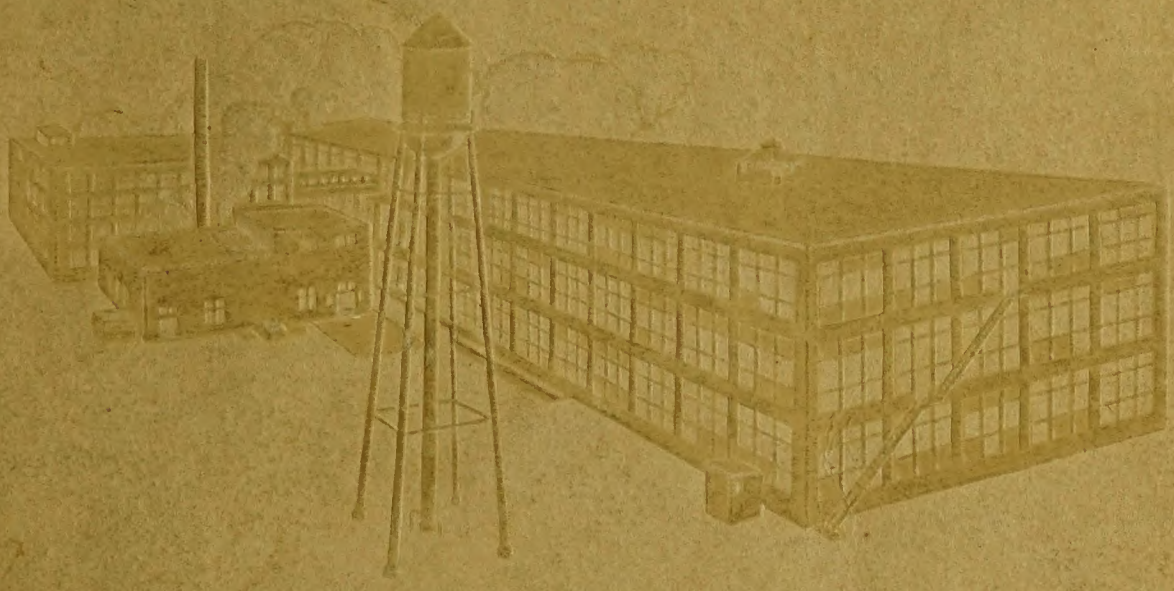
WESTINGHOUSE CHURCH KERR & CO.



WORK DONE

AVERY LIBRARY
COLUMBIA UNIVERSITY

WORK DONE

NUMBER SIX

INDUSTRIAL EDITION

WESTINGHOUSE CHURCH KERR & CO.
ENGINEERS AND CONSTRUCTORS

NEW YORK

AVERY
CLASSICS
AA
6400
W525

Digitized by the Internet Archive
in 2020 with funding from
Columbia University Libraries

https://archive.org/details/workdonenumbersi00west

WORK DONE

"Well done is better than well said"

IN the following pages we illustrate some of the work which we have done for industrial plants. If you are interested in railroad work, steam and electrical, or in power plants, we should be glad to send you illustrations of what we have done in those lines.

Our work for industrial clients has varied according to each individual need.

In some instances our services were required only for engineering advice on special features of the layout, construction or equipment.

In other instances we rendered engineering service, made complete designs and supervised the construction which was let out on contracts.

In some instances we did the construction work only.

But more often we did it all—designing, supervising and constructing the complete plant.

The Westinghouse Church Kerr organization is so complete that we offer our client whatever service he needs—whether it be the technical ability of experienced engineers or the production of a complete plant ready for work.

How can we be of greatest help to you?

When you plan to build a new plant, or to extend or improve an old plant, you face many definite problems.

What are your requirements as to location? That question may be already settled. Or it may be that the experience of our engineers can be profitably added to your own in choosing a location that will prove most advantageous for the initial building and for subsequent operations.

What are your particular requirements for the receipt and delivery of raw material, your arrangement of buildings, the necessary floor space, the amount of floor loading and proper divisions into departments? Perhaps you have already laid out the most efficient routing and arrangement. But frequently we save thousands of dollars by adding our experience to yours. A saving effected in the routing or arrangement of your plant means not only a saving in its construction, but an actual saving in the cost of operation day after day as long as that factory runs.

Of what material should you build? Perhaps the nature of your business or some business opportunity determines this for you. On the other hand, our long experience and our familiarity with the building material market may help to a decision.

What fittings and equipment will prove most economical not only in first cost but in operation? There is hardly a line of industry in which some of our engineers have not had a sufficiently wide experience to be of value to you.

What are the State building and labor laws or fire underwriters' requirements which must be observed? Perhaps you know. If you do not, we can tell you.

How much will it cost to build the new plant or remodel the old? What will it cost to maintain? How long will it take to build? These are vital questions and demand the best advice you can obtain both inside and outside of your organization.

Have any of your own departments the necessary time to prepare designs and supervise the construction you propose? If so, we will be glad to put our organization at your disposal to do such parts of the work as your departments are not fitted to do.

Has any one of your own departments the necessary experience and ability to build and equip a steel, tile, brick or concrete structure themselves? In the W.C.K. organization there are men with technical training and with the practical skill that comes from experience in every line of construction.

Whether it is a factory, a power plant or a railroad terminal, W.C.K. service begins with an intelligent plan and ends with the last brushful of paint on an efficient plant, with tools on the benches, ready for your workmen to commence work when the whistle blows, if that is what you want.

There are in the W.C.K. organization, engineers for consultation, for appraisal, for investigation and report upon special problems—trained men in every branch of engineering—men with long experience in railroad, in power plant, and in industrial construction.

There are buyers in the W.C.K. organization who practice an economy for you in the purchase and delivery of material and machinery that you could not for yourself.

There is a traffic department in the W.C.K. organization that saves more time than you realize could be lost in shipments and more money than you realize could be saved in freights.

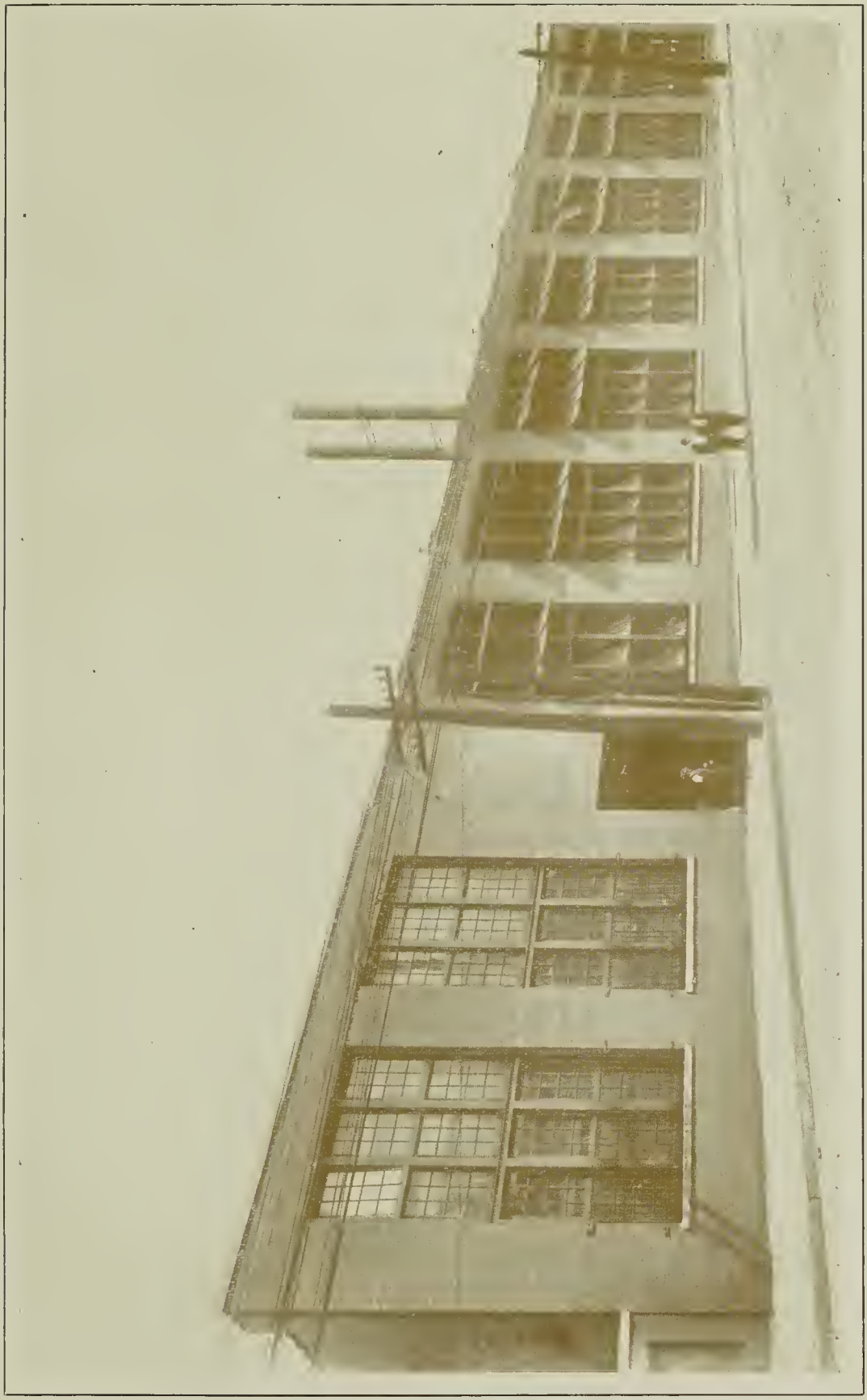
Call W.C.K. engineers, if you will, but engineers who are also purchasing agents, shippers, traffic managers, steel and concrete workers, masons, carpenters, machinists, plumbers, steam fitters, painters, inspectors, auditors —and, primarily, *your agents*—working for your interest.

And remember that W. C. K. is one of the large builders in the country, with all that means in the way of speed, efficiency and economy for you.

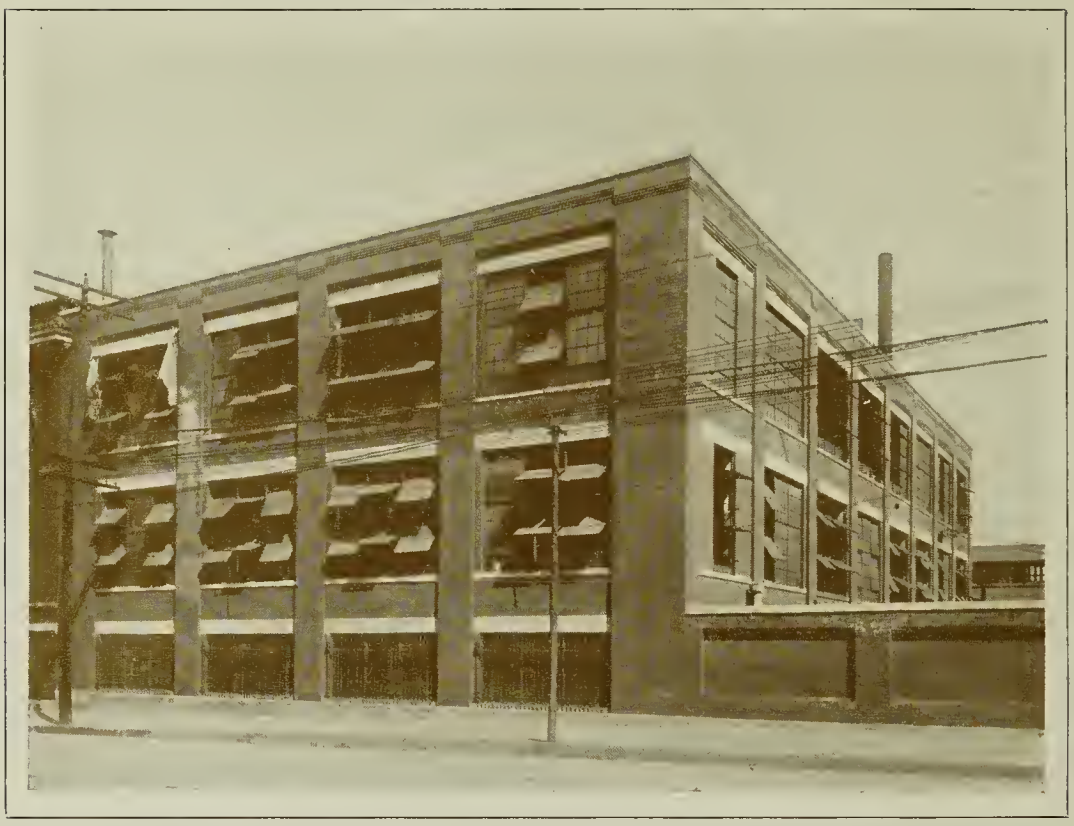
We offer our services as consulting and designing engineers and constructors—to do anything, in whole or in part, that you need done.

We should be glad to know just what your building problem is and to show you just what we could do to help you in that particular problem. Of one thing we are confident from our long experience. There is *some* capacity in which we could profitably serve you in any building enterprise you might undertake.

WESTINGHOUSE CHURCH KERR & CO.



Blacksmith Shop—American Brake Company, St. Louis, Mo.



Machine Shop—American Brake Company, St. Louis, Mo.

AMERICAN BRAKE COMPANY

In common with a great many other plants which have been in operation for some years, the problem at this plant was to install extensions on a peculiarly shaped piece of property and to fit the new buildings in with several existing structures.

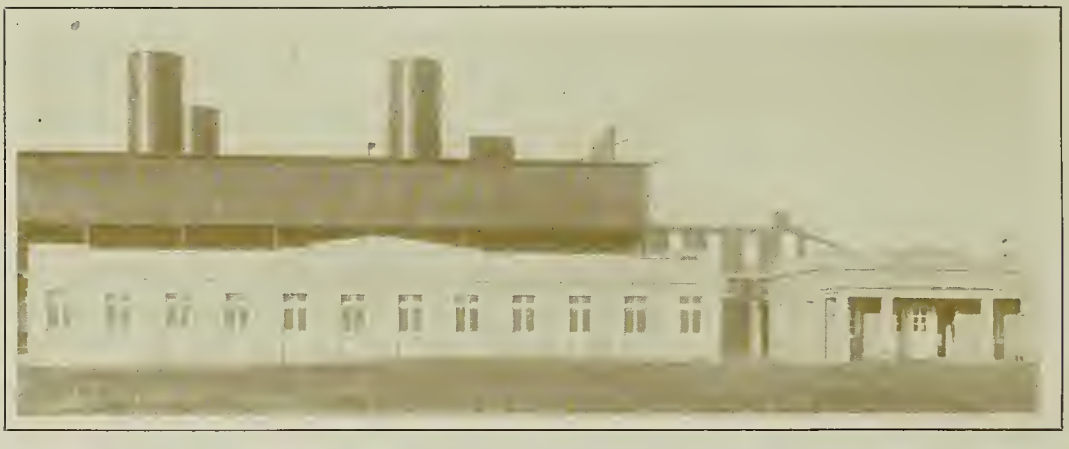
By careful planning ahead, new construction work was carried along without interference with current manufacturing operations.

The plant manufactures brakes for steam and electric railways.

The work in general done here by W. C. K. under the direction of Mr. R. E. Adreon, Vice-President, was the design and construction of a three-story machine shop building and a forge shop. Two other buildings were reconstructed and remodeled and certain other structures wrecked to make place for the new facilities. The buildings are all of fireproof construction with steel frame, brick walls and reinforced concrete floors and roof.

Blacksmith Shop—American Brake Company, St. Louis, Mo.

Office Building—American Cyanamid Company, Niagara Falls, Canada



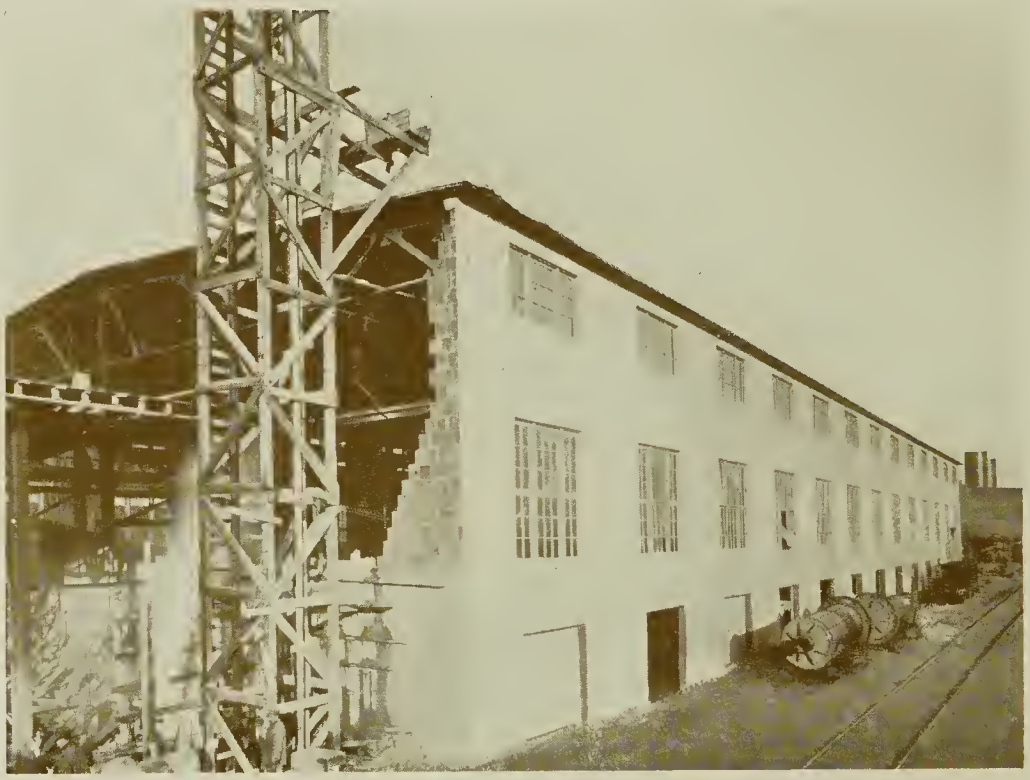
Wash House and Gate House—American Cyanamid Company, Niagara Falls, Canada

AMERICAN CYANAMID COMPANY

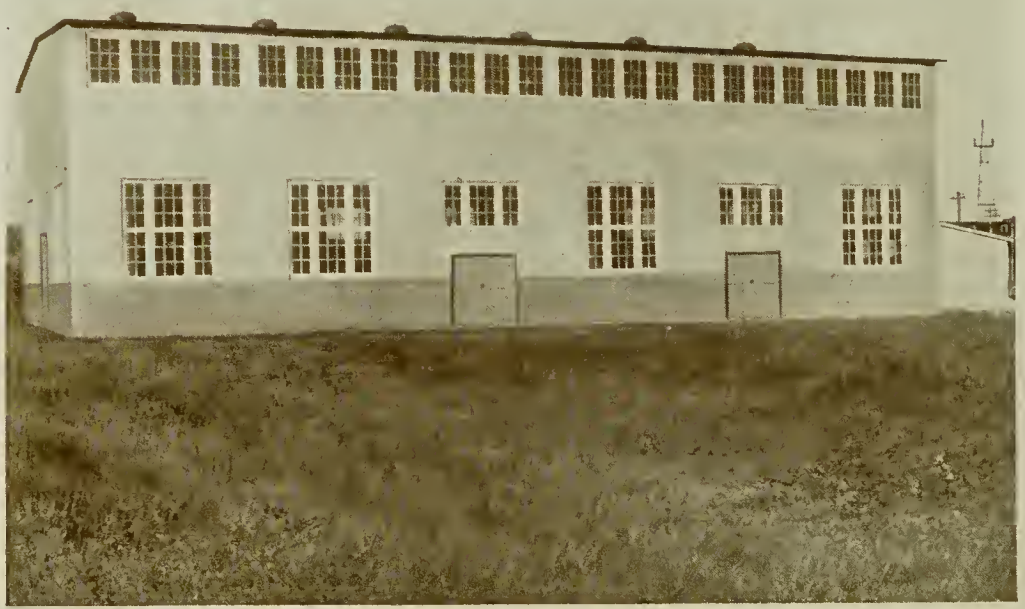
The American Cyanamid Company manufactures Cyanamid, a nitrogenous fertilizer material made by an electrical process with nitrogen derived direct from the air. Its manufacture is a comparatively new art having been developed in Germany. Cyanamid is used by the principal fertilizer companies as a source of ammonia for the making of high grade fertilizers. The work done by W. C. K. was performed under the direction of Mr. K. F. Cooper, General Manager of the American Cyanamid Company, and consisted of the design and construction of a raw material building, a carbide building, a lime nitrogen building, a hydrating building, a lime kiln building, a liquid air building, an office, wash house, laboratory and a silo building, and the design and installation of electrical equipment. Reinforced concrete, structural steel, and terra cotta block construction were employed.

The silo building, containing nine bins with a storage capacity of 4000 tons of pulverized lime nitrogen, was a notable employment of particularly heavy reinforced concrete construction, the walls of the building being designed by the J. I. Jamieson method for wheat storage, but using the weight, angle of repose and angle of friction of lime nitrogen, determined experimentally. The material is extremely heavy and the design is practically that which would be used if the silos held the same weight of water. Various other equipment operations were also performed by W. C. K. such as plumbing, heating, lighting, the installation of conveyors, fans, pulverizers and crushers.

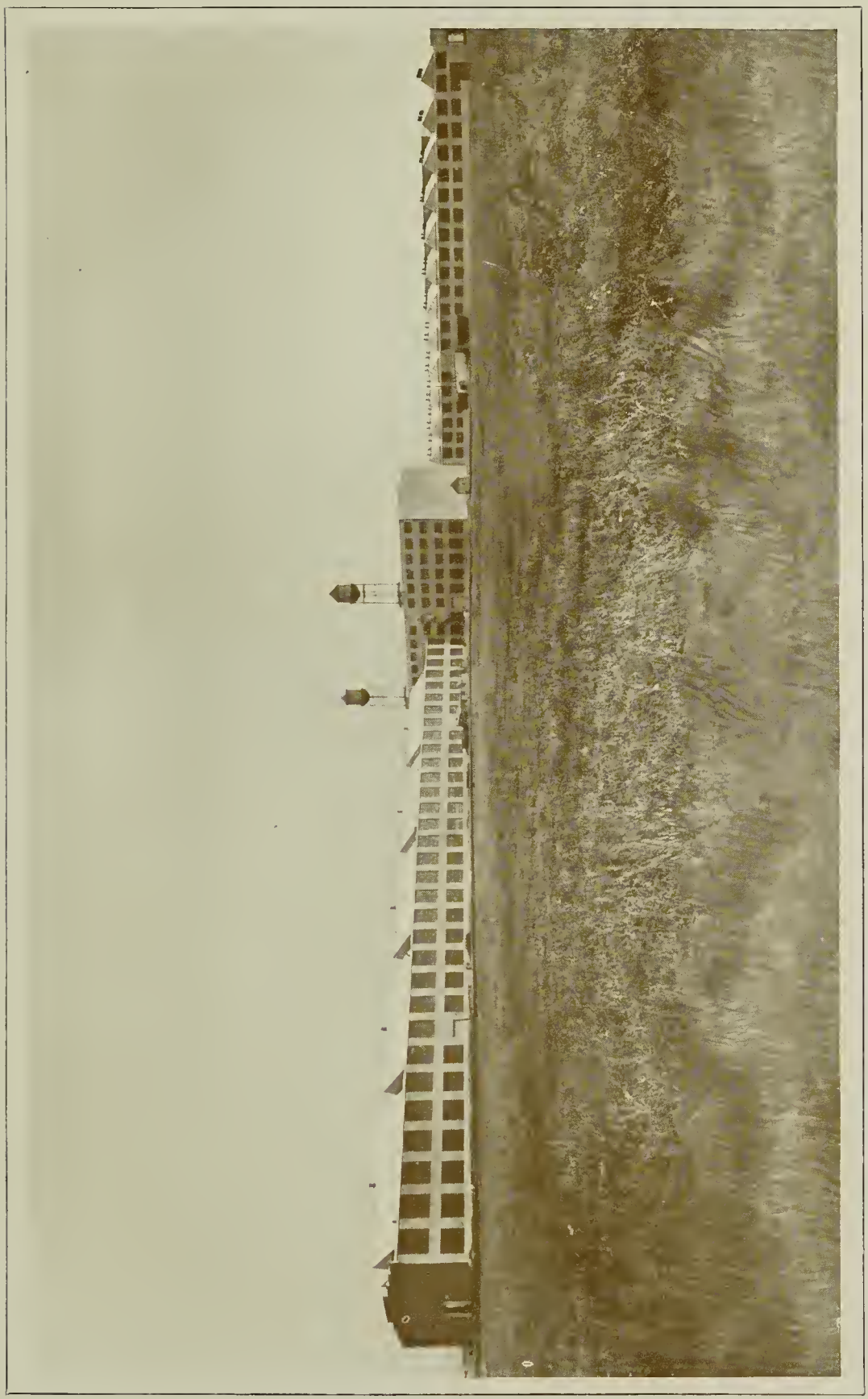
American Cyanamid Company, Niagara Falls, Canada



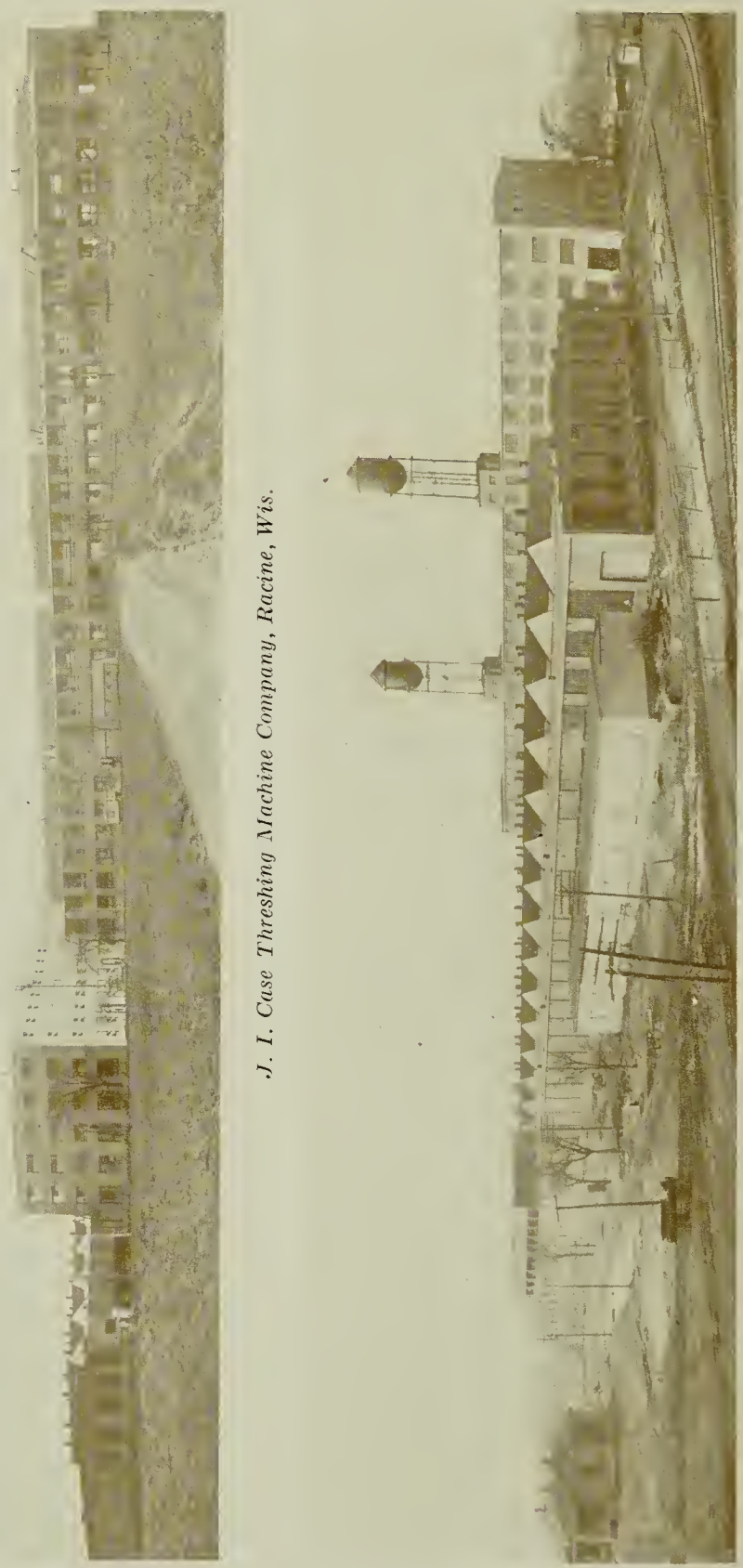
Lime Nitrogen Building—American Cyanamid Company, Niagara Falls, Canada



Liquid Air Building—American Cyanamid Company, Niagara Falls, Canada



J. I. Case Threshing Machine Company, Racine, Wis.



J. I. Case Threshing Machine Company, Racine, Wis.

Gallery Floor, Machine Shop—J. I. Case Threshing Machine Company, Racine, Wis.

J. I. CASE THRESHING MACHINE COMPANY

In laying out this plant it was found to be short of length for future extensions. An intersecting street (Durand) was therefore closed; another street (Clark) moved about 50 ft., and a trolley line taken up and put next to the railroad. These changes were made at a small expense, as there was plenty of open space in which to make them. In a few years the natural growth of the city around the plant would make the same changes difficult, if not in some cases impossible. The present investment of the money to make the changes as compared with an investment for the same purpose five to ten years hence will show an attractive return upon the principal. The work in general done here by W. C. K. under the direction of Messrs. Norton & Adams consisted of the design and construction of a foundry 755 ft. x 176 ft., a machine shop 514 ft. x 145 ft., and a four-story warehouse 400 ft. x 100 ft. Construction in general consisted of concrete foundations, steel frame and brick walls. Among the miscellaneous structures might be mentioned a sand storage bin of reinforced concrete, to take care of 4500 tons of molding sand, and two 50,000-gallon steel tanks, for fire protection, which are mounted on the warehouse.

Foundry—J. I. Case Threshing Machine Company, Racine, Wis.

Chicopee Manufacturing Company, Chicopee Falls, Mass. (Note natural illumination)

Chicopee Manufacturing Company, Chicopee Falls, Mass.

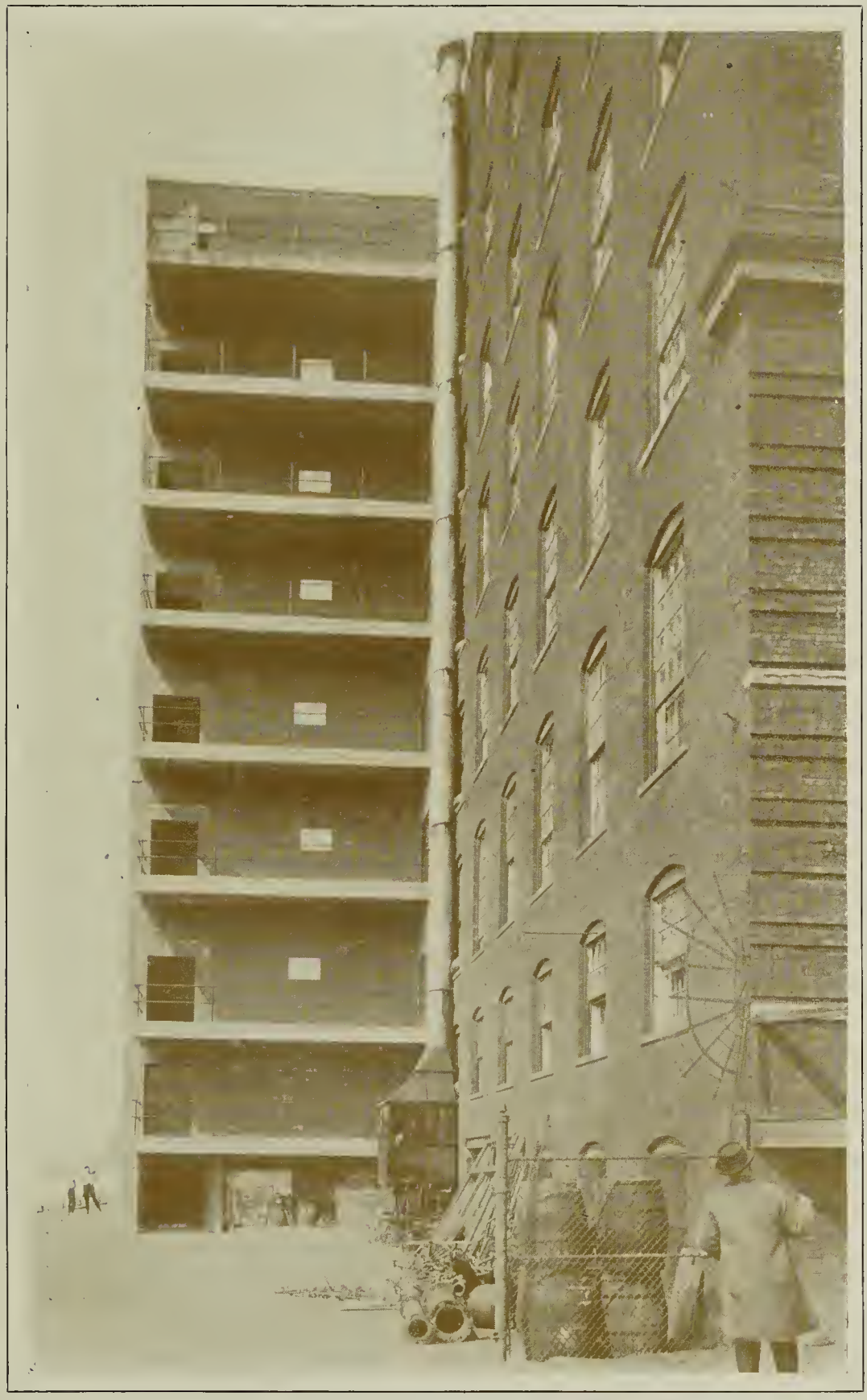
CHICOPEE MANUFACTURING COMPANY

This building embodies several new principles in weave shed construction without material increase in cost.

Design was first made of the most economical loom layout with reference to the looms per weaver and per loom-fixer's section. Northrup looms were installed and were grouped in blocks of six instead of the conventional four. Six rows of looms were also designed for each bay instead of four, and a method of construction adopted to make it possible to provide for wider bays than in weave sheds of the standard type. To get maximum light and the greatest floor areas free of obstruction, the looms are driven from below and all shafting placed in the basement. In this weave shed, shadows are hardly perceptible when the hand is held four inches above the cloth, whereas in some high studded sheds, shadows can be produced by the hand held at twelve inches above the cloth.

The work in general done by W. C. K. under the direction of Mr. Albert Greene Duncan consisted in the design and construction of a building 250 ft. x 140 ft. The walls are built of concrete block with cast iron columns and structural steel roof frame. Ground for the building was broken on March 28th and the building completed July 1st.

Chicopee Manufacturing Company, Chicopee Falls, Mass.



Emergency Stair Tower—Cluett, Peabody & Company, Troy, N. Y.

Stairway and Landing—Cluett, Peabody & Company, Troy, N. Y.

CLUETT, PEABODY & COMPANY

The modern slogan, "SAFETY FIRST," finds a unique and practical application in the two stair towers designed and constructed by W. C. K. for the Jay Street factory of Cluett, Peabody & Company, of Troy, N. Y. These towers provide safe means of exit in case of fire.

They are of brick construction, fireproof and smokeproof, and enclose stairs of reinforced concrete throughout, which serve the six upper floors of the factory. One tower is located at the rear of the factory and the other at the front. The water tank for supplying the sprinkler system of the factory is located on top of the front tower, bringing the height of this tower to approximately 130 ft. above ground level.

Exit is made from the factory building through doorways, provided with automatic fire doors, on to balconies in the open air at each of the upper floors. The entrances from the balconies to the tower are through doorways, also provided with automatic fire doors. The stairs are thus entirely enclosed and isolated from the factory building, illumination being by electric lights on a circuit entirely separate from the factory circuit. The tread of the stairs is wider than ordinary and in no case does the rise exceed 6¾ inches. The stairs are wide enough to accommodate the maximum number of persons permitted on the floors of the building and are also designed to serve an extension of the factory which will add seventy-five per cent. greater capacity for employees.

The State authorities have given their unqualified approval to the scheme and expressed the belief that these towers more adequately comply with the conditions and requirements of the laws than any other scheme that has been presented for their approval.

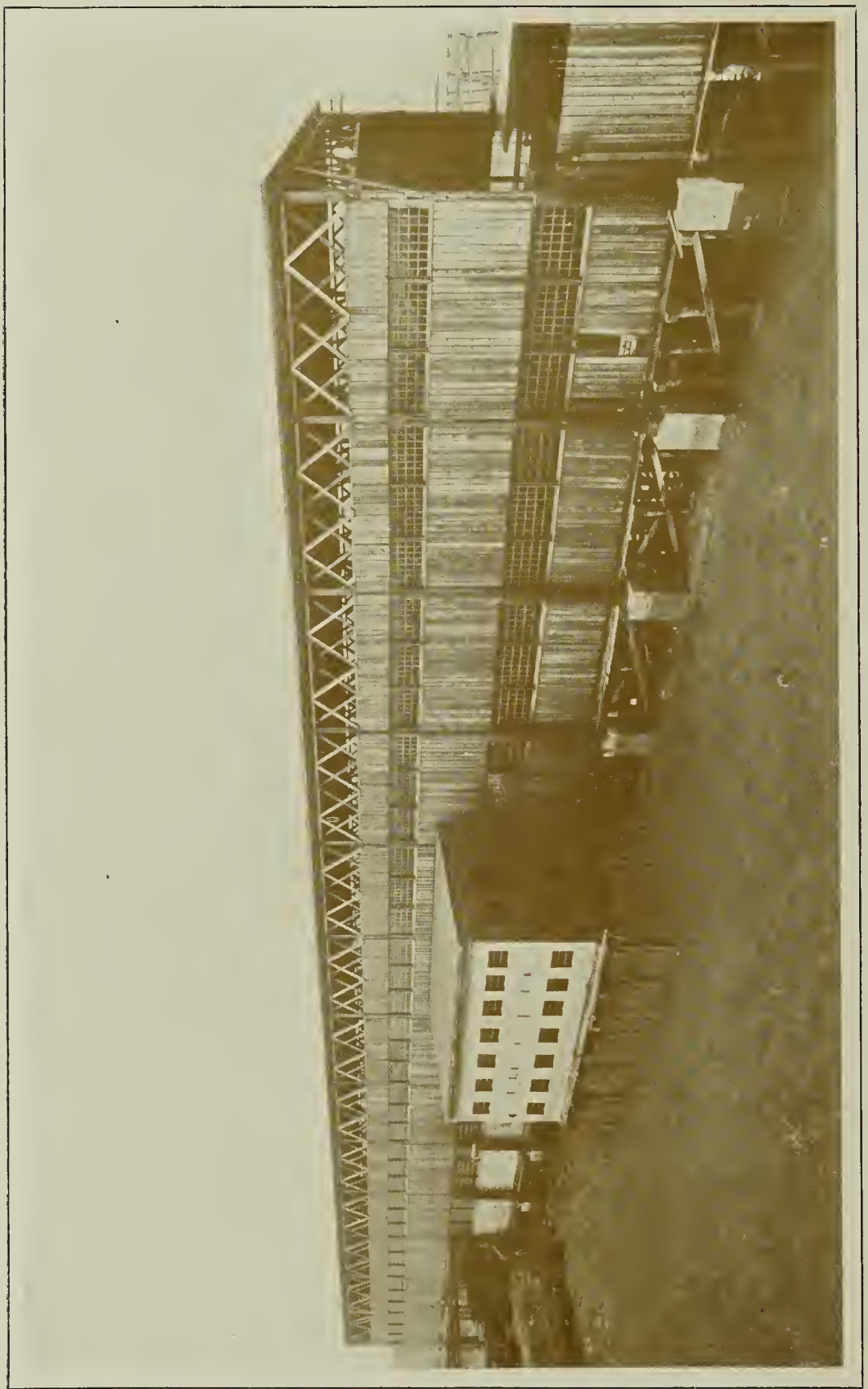
JOHN COUGHLAN & SONS

This plant is planned eventually to be 675 ft. x 180 ft., comprising three units, for the most part a pile structure extending into a creek. Westerly portion of plant as built covers an area of 675 ft. x 60 ft.

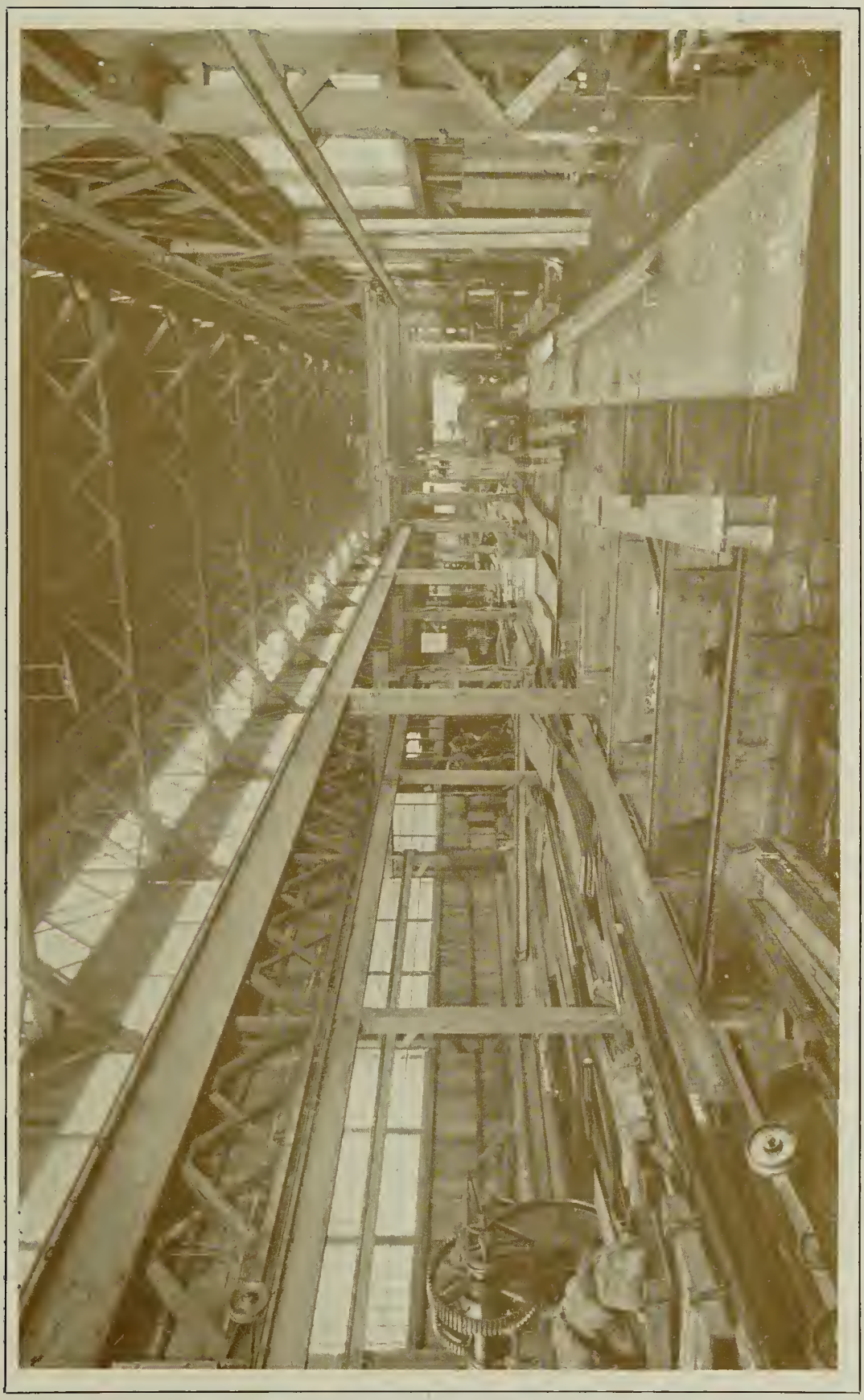
The building is of timber supported on wooden pile foundations. Superstructure timber frame with trusses 60 ft. span, spaced 30 ft. apart. This frame also supports longitudinal crane trusses about 9 ft. deep capable of carrying two 15-ton traveling cranes. Trusses rest on wooden columns supported by concrete piers built on piles. Building is enclosed only on two sides to permit handling of material.

In construction of substructure, 969 piles ranging in length from 20 ft. to 50 ft. were driven, on which were placed 10 x 16 and 12 x 16 caps and 6 x 14 stringers, drift bolted together. On this was laid 4 inch floor.

Contract for design and construction of substructure and superstructure awarded October 21st, and actual operation of plant started about middle of May of the following year.



John Coughlan & Sons, Vancouver, B. C.



John Coughlan & Sons, Vancouver, B. C.

Weave Shed—Draycott Mills, New Hartford, Conn.

DRAYCOTT MILLS

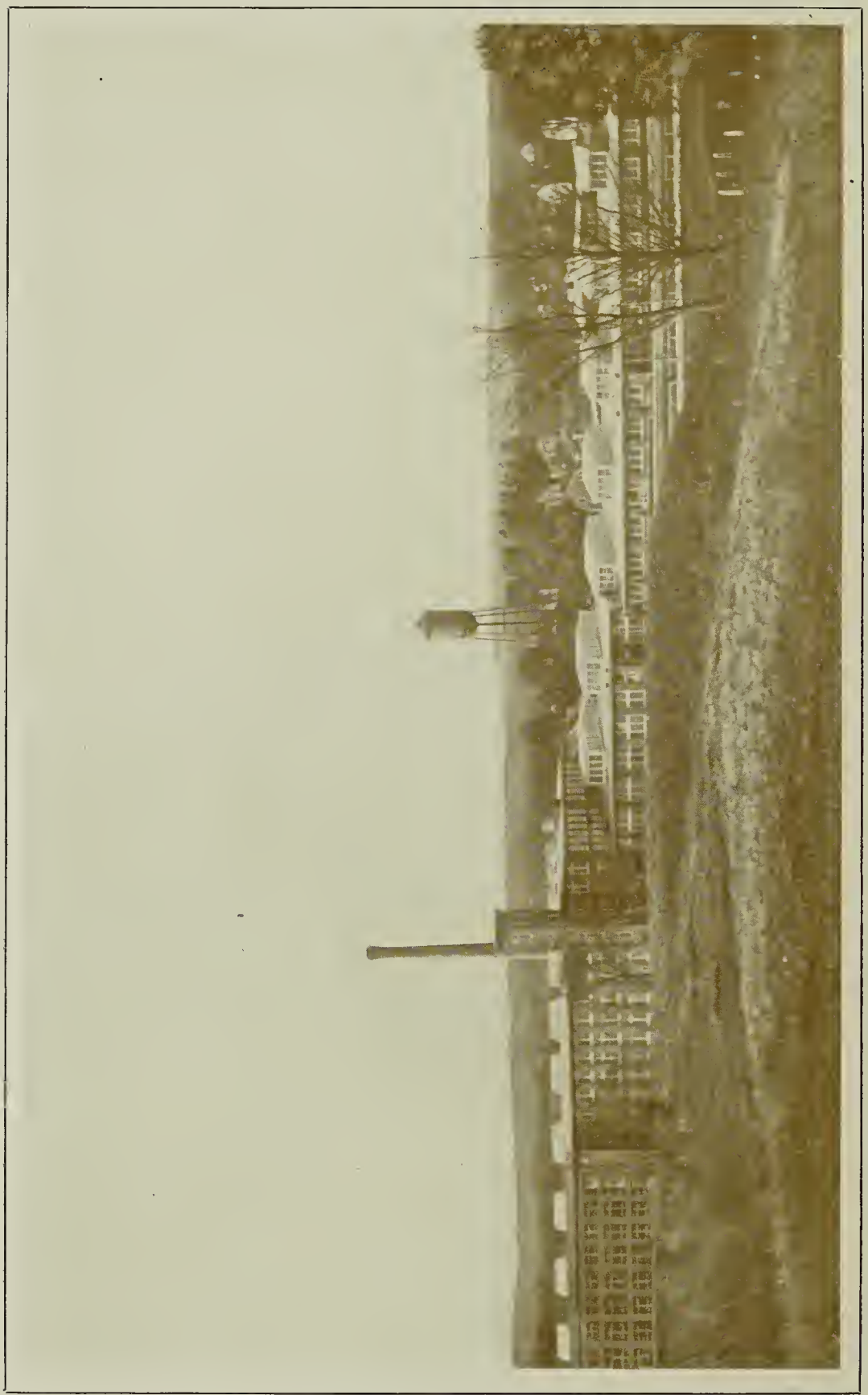
This work was performed for the Clarence Whitman interests and under the plans, specifications and direction of Messrs. Lockwood, Greene & Co., the well-known mill engineers with offices in Boston, Mass., and Greenville, S. C. The work done by W. C. K. consisted of the construction of a new building, the overhauling of some water wheels and the addition of a small electric generating plant.

ESMOND MILLS

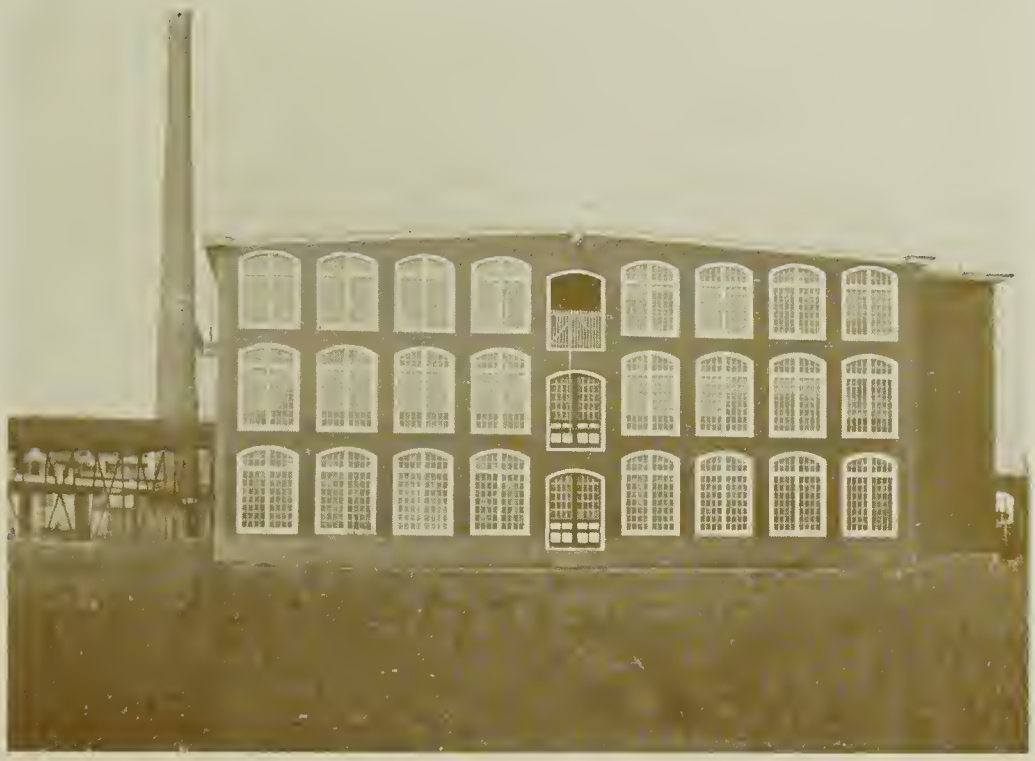
This work in common with all construction work done by W. C. K. was performed for net cost plus a fee. It was obtained in competition with several lump sum bidders. The final cost of the work was two per cent. lower than the lowest lump sum bid. No changes were made in the plans or specifications after the work began. An unsolicited letter from the management says, "We are very glad to be able to say that we think this is as fine a piece of mill construction work as we have ever seen." The work done by W. C. K. under the direction of Mr. H. L. Crocker consisted of an addition to the finishing building and to the dye house. Later several single and double houses were built for the employees. Attention was given to their architecture so that they are attractive in appearance and sought after by the employees.

Weave Shed—Draycott Mills, New Hartford, Conn.

Finishing Building addition—Esmond Mills, Esmond, R. I.



Esmond Mills, Esmond, R. I.



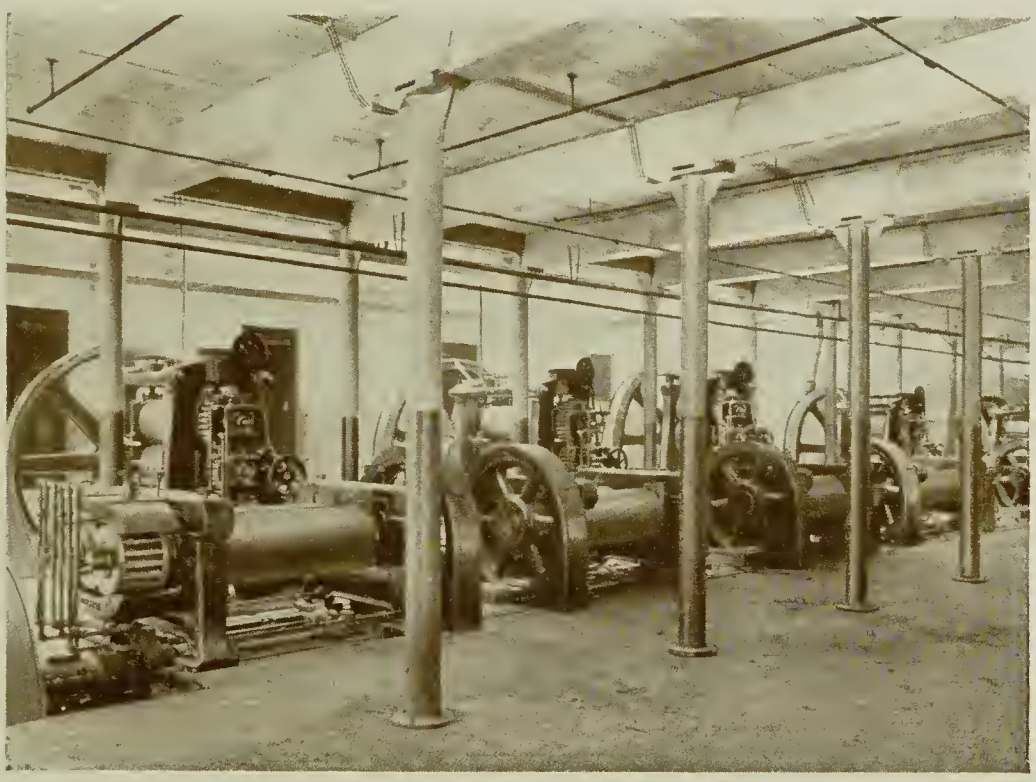
Finishing Building—Esmond Mills, Esmond, R. I.

Mixing and Warming Mills—Federal Rubber Manufacturing Company, Cudahy, Wis.

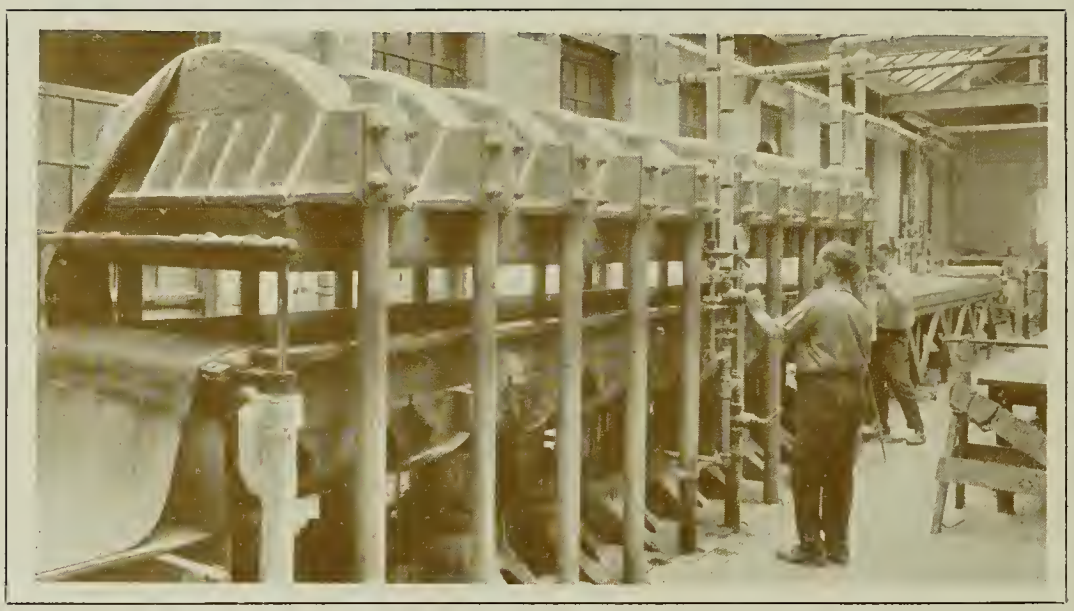
Office—Federal Rubber Manufacturing Company, Cudahy, Wis.

Warehouse—Federal Rubber Manufacturing Company, Cudahy, Wis.

Office Dining Hall—Federal Rubber Manufacturing Company, Cudahy, Wis.



Warming Mills—Federal Rubber Manufacturing Company, Cudahy, Wis.



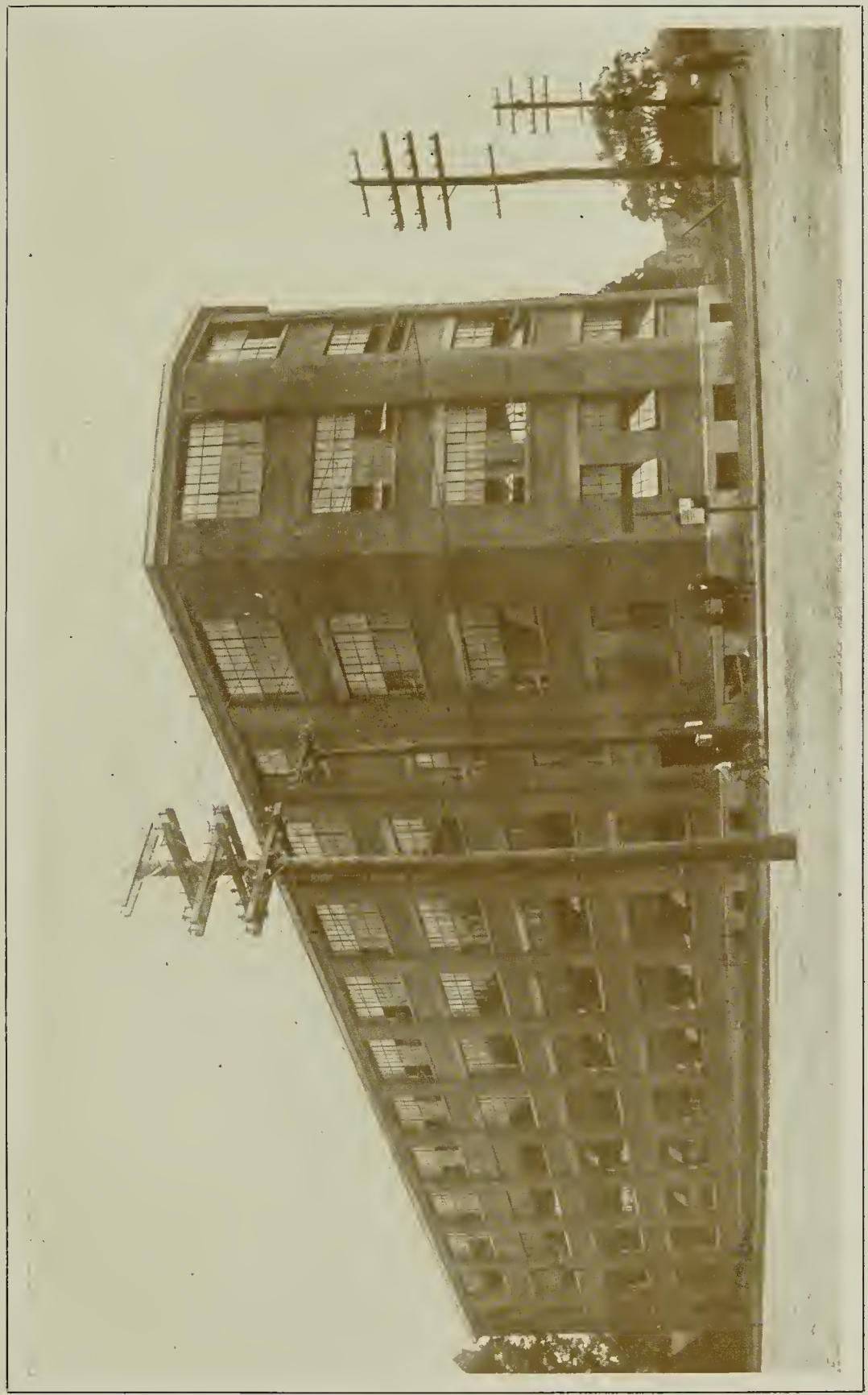
Matting Press—Federal Rubber Manufacturing Company, Cudahy, Wis.

FEDERAL RUBBER MANUFACTURING COMPANY

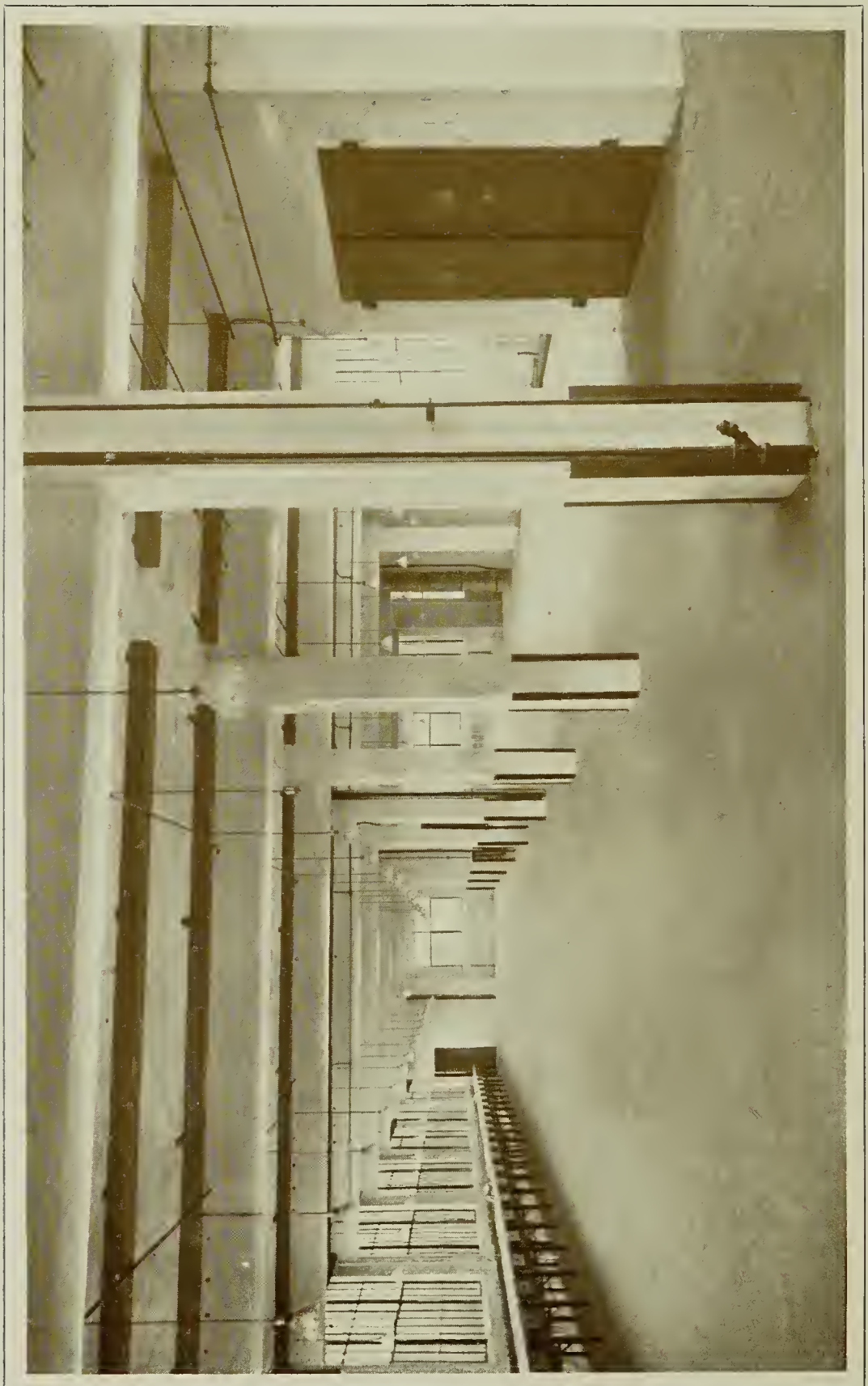
An instance of obtaining additional space at small cost is found at this plant where, between buildings 6 and 8, there used to be a dead-end alley 14 ft. wide by about 80 ft. long. A skylight was thrown over this space between the buildings, one end wall and a floor built and a matting press and other machinery installed in the space thus enclosed. The additional space for the press was obtained in this way for about sixty per cent. of what it would have cost to have built an addition to one of the buildings.

Another economy was effected in building a warehouse where it was found possible to combine one-half of its foundations with the concrete walls of an underground 100,000-gallon cistern holding water for fire protection. About 125 yds. of concrete was saved by this simple combination.

The work done by W. C. K. under the direction of Mr. B. C. Dowse, President, covered the design and construction of many improvements, including a new press building, a new machine shop and general storage building, alterations to an existing warehouse, extension to the office building, extension to power plant and a great variety of overhauling and re-arrangement of the mechanical and electrical parts of the plant. About seventy-five per cent. of the mills and calenders were re-located without seriously interfering with operation.



Gamewell Fire Alarm Telegraph Company, Newton Upper Falls, Mass.



Gamewell Fire Alarm Telegraph Company, Newton Upper Falls, Mass.

GAMEWELL FIRE ALARM TELEGRAPH COMPANY

Four story and basement reinforced concrete building 188 ft. x 50 ft. with wing 46 ft. x 29 ft. building foundations, columns and footings of concrete.

Roof and floors of hollow tile concrete moulded monolithic ribs 16 in. C. to C. with unit reinforcement. Double ribs on column lines.

Floor loading, 200 lbs. first floor, others 150 lbs., with exception of second and third floors of stock rooms in wing, which is 500 lbs.

Slotted inserts for shafting symmetrically placed in ceiling all over the plant.

Fireproof throughout, general illumination throughout, steel window frames, kalamein doors.

Vacuum system of heating, using exhaust steam, dust exhaust, etc.

HART MANUFACTURING COMPANY

Main building 250 ft. 4 in. x 50 ft.—four stories with extension on one side 81 ft. 4 in. x 17 ft.; total floor area 51,200 sq. ft.

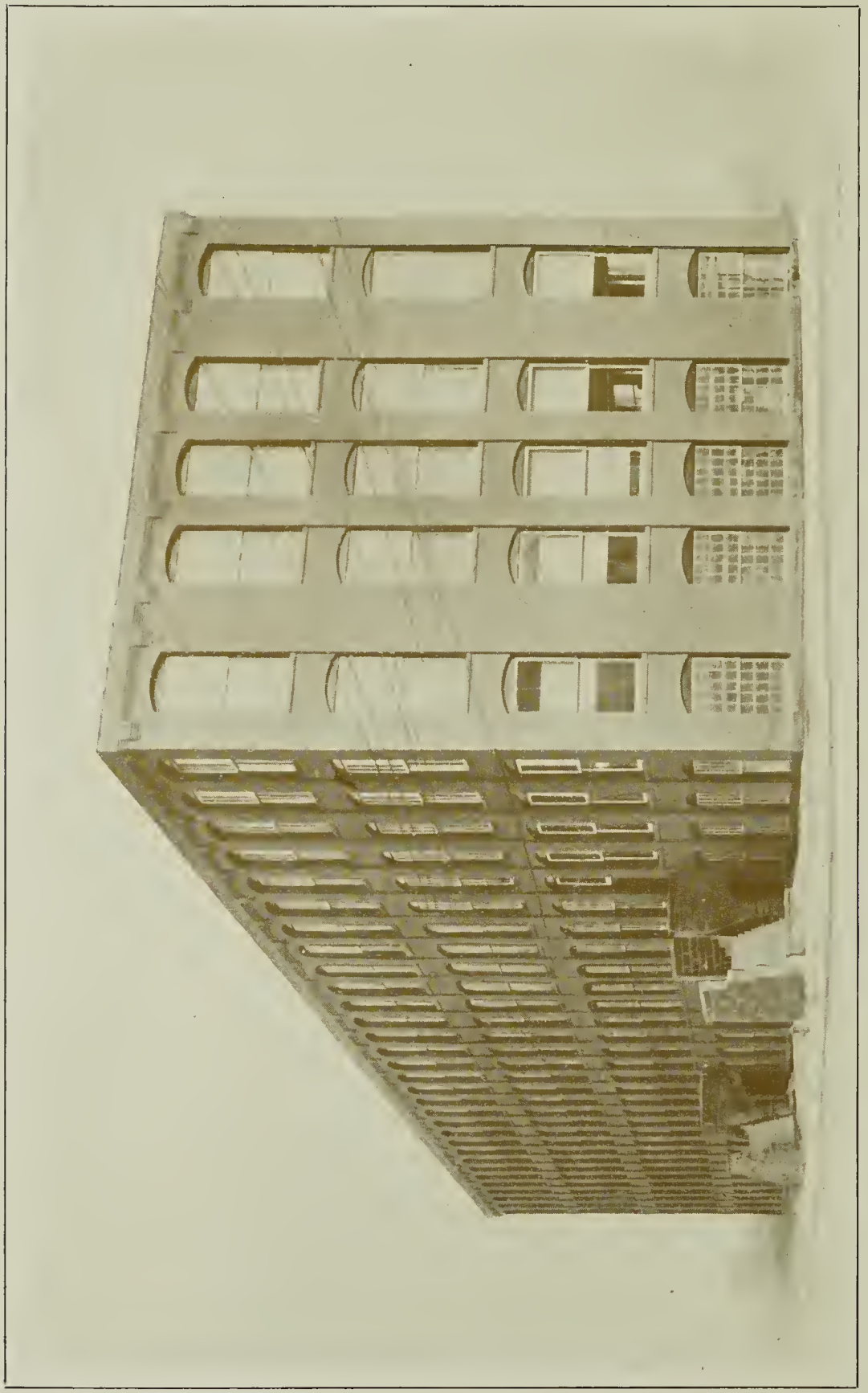
Footings, footing walls, column foundations and basement floor are of concrete.

Exterior walls are of brick piers with brick curtain walls between, and wood windows.

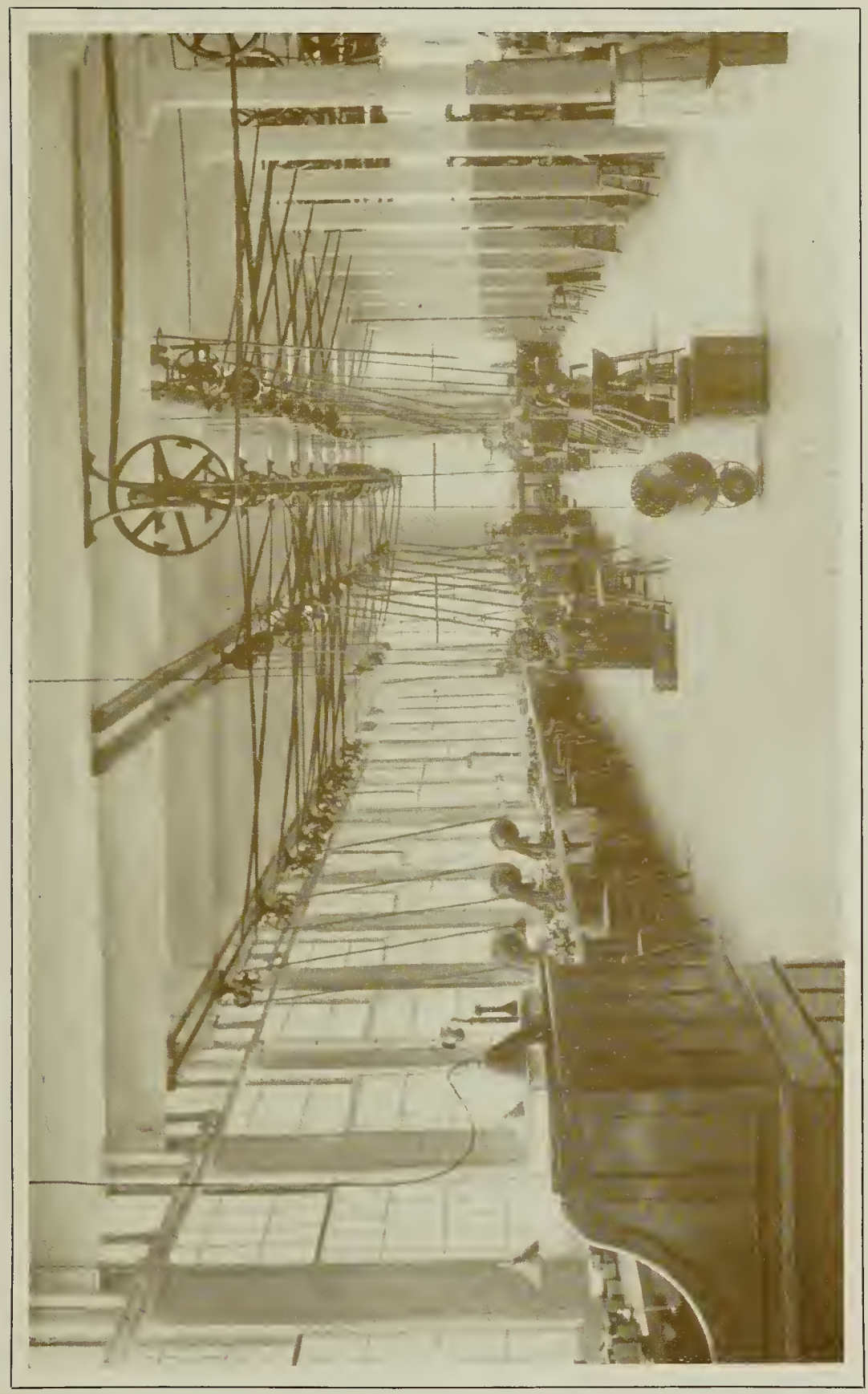
Floor with exception of basement, made of 2x6 planks on edge, with under edges beveled, resting on girders on top of which were laid 2 in. planks diagonally and on top finished floor of tongued and grooved maple.

Roof of 2 in. splined planks on which was placed Barrett Specification tar and gravel roofing.

Service equipment consisted of steam heating plant, plumbing, electric lighting, sprinkling system and electric elevator.



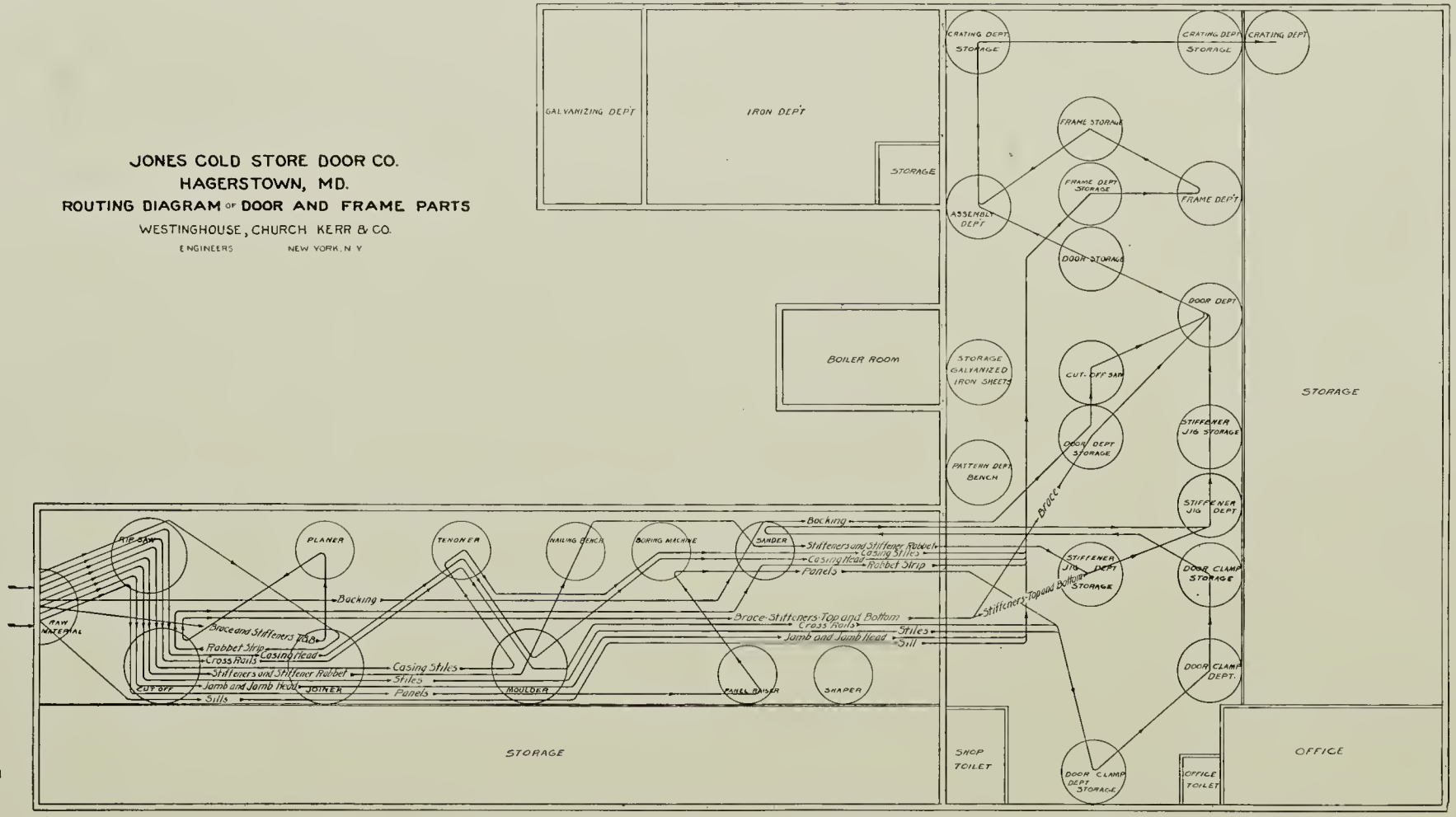
Hart Manufacturing Company, Hartford, Conn.



Typical Floor—Hart Manufacturing Company, Hartford, Conn.

JONES COLD STORE DOOR CO.
HAGERSTOWN, MD.
ROUTING DIAGRAM OF DOOR AND FRAME PARTS

WESTINGHOUSE, CHURCH KERR & CO.
ENGINEERS NEW YORK, N.Y.



Jones Cold Store Door Company, Hagerstown, Md.

JONES COLD STORE DOOR COMPANY

This plant, located at Hagerstown, Maryland, manufactures every type of insulated door for refrigerating work.

The work done by W.C.K. consisted of a main building with two wings and a small addition for boiler room. After a study of machine operations, the layout of the machinery was made first and a building then designed which would most economically house the machinery arrangement determined upon.

As will be noted from the diagram on the preceding page, much thought was given to the routing of materials, so that backward and duplicate motions were, to a very large degree, eliminated. There is practically no retrograde movement of the product from the time the raw material enters the factory until the completed door goes into the storage and shipping room.

A letter from Mr. J. V. Jamison, Jr., the Secretary and Treasurer of the Company, says:

"The new work plan and general layout of our factory is perfectly satisfactory and has very materially reduced the cost of production. * * *

"The arrangement and layout of the building we do not believe could be improved and if we were to build again we would do the same thing."

Northwestern Brass Company, Calgary, Alberta

NORTHWESTERN BRASS COMPANY

W. C. K. often perform complete construction and equipment work under the plans, specifications and direction of the regular engineering staff of the plant itself or outside consulting engineers. In this instance, W. C. K. worked under the plans and direction of A. E. Baxter Engineering Co., of Buffalo, N. Y.

When the work was finished, an unsolicited letter from the management of the Brass Company said: "In all justice we must say that it is the finest piece of concrete work that we ever saw from a factory point of view."

The building consists of a one-story monolithic reinforced concrete structure housing all departments.

THE SPIRELLA COMPANY

This plant manufactures high-grade corsets. The work done by W. C. K. consisted of the design and construction of a plating and wire works. This is the first section of what will ultimately be a very large and complete plant.

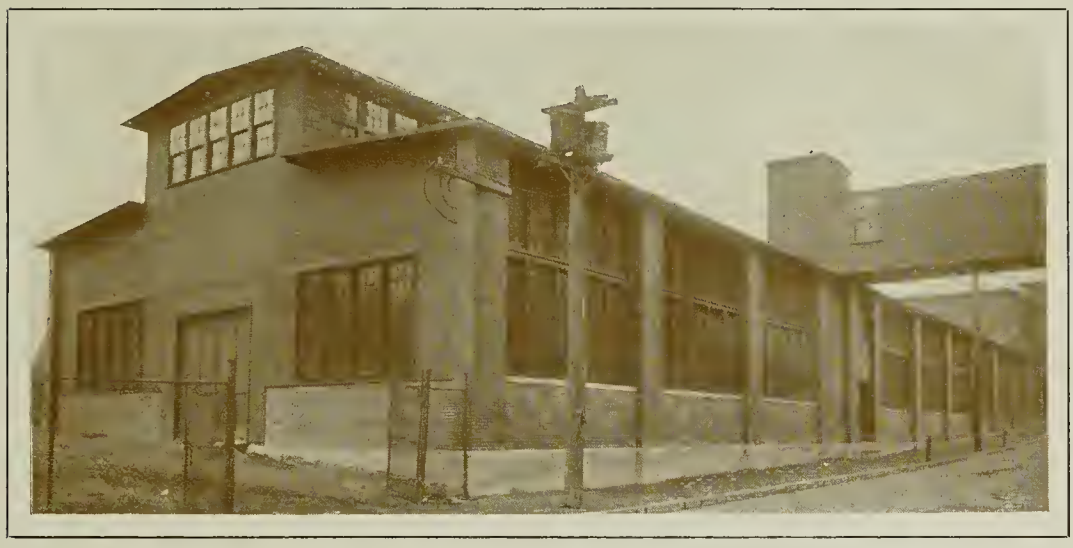
On account of the prominent location of the plant on the Niagara Gorge, special attention was given to external appearance and also to the desire of the client to have a model interior, as it is expected that many tourists at the Falls will visit the Spirella plant.

Several problems were encountered, among them the necessity of a clear space in the plating room which made it necessary to construct a sloping roof of heavy steel plate girders encased in concrete to provide protection against fire and the acids used in the plating processes. Special attention also had to be given to the ventilation, drainage and waterproofing of the plating room which is on the second floor of the factory.

Plating Room—The Spirella Company, Niagara Falls, N. Y.

The Spirella Company, Niagara Falls, N. Y.

Weave Shed—Touraine Company, New Hartford, Conn.



Weave Shed—Wilkesbarre Lace Manufacturing Company, Wilkesbarre, Pa.

TOURAINE COMPANY

This work was done for the above company under the plans and direction of Messrs. Lockwood, Greene & Co., well-known mill engineers of Boston, Mass., and Greenville, S. C. The building is a one-story structure with concrete foundations and wood frame.

WILKESBARRE LACE MANUFACTURING COMPANY

A bleach house presents a difficult problem in properly taking care of the employees. By its nature, the floors are wet and the room full of vapor. Particular attention was given to these two features in this work. A concrete floor was installed and large drains provided so that there is no standing water. Warm air is blown into the building and the steam and vapor rapidly removed so that the air is practically as good as that in any other part of the mill. The work done by W. C. K. under the direction of Mr. Geo. H. Smith, consisted in general of a weave shed with concrete foundations, brick walls and steel frame roof, a two-story bleach house and a three-story stock house, of heavy mill type construction. The weave shed presents an interesting contrast in requirements and construction to the Chicopee Manufacturing Company weave shed, shown on page 17. At Wilkesbarre there are no interior columns whatever on account of the Jacquard looms and the entire roof arrangement is also changed.

Jacquard Looms—Wilkesbarre Lace Manufacturing Company, Wilkesbarre, Pa.

Storehouse—Wilkesbarre Lace Manufacturing Company, Wilkesbarre, Pa.

WORK DONE

NUMBER SIX

INDUSTRIAL EDITION

Index

	PAGE
Foreword	3
American Brake Company, St. Louis, Mo.	7
American Cyanamid Company, Niagara Falls, Canada	9
J. I. Case Threshing Machine Company, Racine, Wis.	13
Chicopee Manufacturing Company, Chicopee Falls, Mass.	16
Cluett, Peabody & Company, Troy, N.Y.	19
John Coughlan & Sons, Vancouver, B.C.	21
Draycott Mills, New Hartford, Conn.	24
Esmond Mills, Providence, R.I.	24
Federal Rubber Manufacturing Company, Cudahy, Wis.	27
Gamewell Fire Alarm Telegraph Company, Newton Upper Falls, Mass.	31
Hart Manufacturing Company, Hartford, Conn.	33
Jones Cold Store Door Company, Hagerstown, Md.	36
Northwestern Brass Company, Calgary, Canada	38
The Spirella Company, Niagara Falls, N.Y.	39
Touraine Company, New Hartford, Conn.	42
Wilkesbarre Lace Manufacturing Company, Wilkesbarre, Pa.	43

Partial List of Construction Engagements

(Figures indicate number of engagements)

Adams Manufacturing Company,	Shelton, Conn.
Alberta Home Builders, Limited,	Calgary, Alberta, Canada
American Brake Company,	St. Louis, Mo.
American Car and Foundry Co., (2)	New York, N. Y.
American Cyanamid Company, (2)	Baltimore, Md.
Atlanta Water and Electric Power Co.,	Morgans Falls, Ga.
Baltimore & Ohio Railroad Co., (2)	Baltimore, Md.
Barrett Nephews Company,	New York, N. Y.
Bates Manufacturing Company,	Lewiston, Me.
Boldt, George C.,	Alexandria Bay, N. Y.
Boston & Albany Railroad Company,	West Springfield, Mass.
Boston Terminal Company,	Boston, Mass.
Briarcliff Lodge,	Briarcliff Manor, N. Y.
Brinson Railway Company, (2)	Springfield, Ga.
British Columbia Electric Railway, (2)	Vancouver, B. C.
Cafe de l'Opera,	New York, N. Y.
Canadian Pacific Railway Co., (4)	Montreal, Quebec, Canada
Canadian Westinghouse Co., Ltd.,	Hamilton, Ontario, Canada
Case, J. I., Threshing Machine Co.,	Racine, Wis.
Central Indiana Lighting Company,	Columbus, Ind.
Central New England Railway,	Hartford, Conn.
Central Railroad Co. of New Jersey, (3)	New York, N. Y.
Chapman Valve Manufact'g Co., (2)	Indian Orchard, Mass.
Chesapeake & Ohio Railway Co., (8)	Richmond, Va.
Chesebrough Building Company, (3)	New York, N. Y.
Chicago & Alton Railroad Company, (2)	Bloomington, Ill.
Chicago, Burlington & Quincy R. R.,	Havelock, Neb.
Chicago Railway Equipment Co.,	Chicago, Ill.
Chicopee Manufacturing Co., (2)	Chicopee Falls, Mass.
Cluett, Peabody & Co.	Troy, N. Y.
Colorado & Southern Railroad,	Denver, Colo.
Consolidated Railway Company,	New Haven, Conn.
Cornell University, (2)	Ithaca, N. Y.
Coughlan, J., & Sons,	Vancouver, B. C., Canada
Detroit Edison Company, (2)	Detroit, Mich.
Dexter & Son, C. H., (2)	Windsor Locks, Conn.
Dow's School, Mrs.	Briarcliff Manor, N. Y.
Draycott Mills,	New Hartford, Conn.
Edison Electric Illuminating Co.,	Brockton, Mass.
Edison Electric Light Company, (2)	York, Pa.
Erie Railroad Company, (2)	New York, N. Y.
Esmond Mills, (2)	Providence, R. I.
Federal Rubber Manufacturing Co., (2)	Cudahy, Wis.
Frederick & Middletown R. R. Co.,	Frederick, Md.
Freeport Texas Company,	Freeport, Tex.
Gallatin Valley Electric Railway,	Bozeman, Mont.
Gamewell Fire Alarm Telegraph Co.,	Newton Upper Falls, Mass.
General Railway Signal Company,	Rochester, N. Y.
Gettysburg Water Company,	Gettysburg, Pa.
Glenlyon Dye Works,	Phillipsdale, R. I.
Grand Trunk Railway System,	Montreal, P.Q., Canada
Great Falls & Old Dominion R. R. Co.,	Washington, D. C.
Hamilton Manufacturing Company,	Lowell, Mass.
Harmony Mills,	Cohoes, N. Y.

Harriman, E. H., Mrs.	Arden, N. Y.
Hart Manufacturing Company,	Hartford, Conn.
Hartford Electric Light Company, (3)	Hartford, Conn.
Hein Lehmann & Company,	Berlin, Germany
Homeopathic Hospital,	Pittsburgh, Pa.
Hood Rubber Company,	East Watertown, Mass.
Hotel Manhattan,	New York, N. Y.
Hotel Nassau,	Long Beach, L. I.
Hotel Pontchartrain,	Detroit, Mich.
Huntington Light & Power Co.,	Huntington, L. I.
Idaho & Washington Northern R. R.,	Spirit Lake, Idaho
Illinois Central Railroad Co., (2)	Chicago, Ill.
Indian Orchard Company,	Indian Orchard, Mass
Indianapolis Rubber Company,	Indianapolis, Ind.
Jefferson & Braddock Heights R.R. Co.,	Frederick, Md.
Jones Cold Store Door Company,	Hagerstown, Md.
Kansas City, Mexico & Orient R. R.,	Wichita, Kans.
Lehigh Valley Railroad,	Philadelphia, Pa.
Long Island Railroad,	New York, N. Y.
Louisiana Purchase Exposition,	St. Louis, Mo.
Maxwell, George T.,	Oyster Bay, N. Y.
Meriden Electric Light Co., (2)	Meriden, Conn.
Middletown Electric Light Company,	Middletown, Conn.
Mississippi Wire Glass Company, (2)	New York, N. Y.
Missouri Pacific Railway Co., (6)	St. Louis, Mo.
Morgan, J. P.,	Highland Falls, N. Y.
Neptune Meter Company,	Long Island City, N. Y.
New Jersey Rubber Company,	Lambertville, N. J.
New York Belting and Packing Co.,	Passaic, N. J.
New York Central & Hudson River Railroad Company,	New York, N. Y.
New York Central Iron Works Co.,	Hagerstown, Md.
New York City Railway Company,	New York, N. Y.
New York, New Haven & Hartford Railroad Company, (6)	Boston, Mass.
New York, Ontario & Western Ry.,	Middletown, N. Y.
Northern Colorado Power Co.,	Lafayette, Colo.
Northwestern Brass Company, Ltd.,	Calgary, Canada
Ohio Valley Finance Company,	East Liverpool, O.
Ottawa Electric Company,	Ottawa, Ontario, Canada
Peerless Rubber Manufacturing Co., (2)	New Durham, N. J.
Pennsylvania Railroad Company, (2)	Philadelphia, Pa.
Phipps, Henry	Pittsburgh, Pa.
Phipps, J. S., (2)	New York, N. Y.
Pittsburgh & Lake Erie R. R., (2)	Pittsburgh, Pa.
Pittsburgh Building Company, (5)	Pittsburgh, Pa.
Procter & Gamble Company,	Armourdale, Kans.
Richmond County Country Club,	Staten Island, N. Y.
Roosevelt Hospital,	New York, N. Y.
St. Louis, Iron Mountain & Southern Railway, (2)	St. Louis, Mo.
Santa Clara Lumber Company,	New York, N. Y.
Second National Bank Building,	Pittsburgh, Pa.
Sheffield Scientific School,	New Haven, Conn.
Shenandoah River Light & Power Corporation,	Luray, Va.

Smith Infirmary,	Staten Island, N. Y.
South Side Hospital, Oliver Annex,	Pittsburgh, Pa.
Spirella Company, The	Niagara Falls, N. Y.
Standard Plunger Elevator Company,	Worcester, Mass.
Stanley Works,	New Britain, Conn.
Taylor-Wharton Iron & Steel Co.,	Easton, Pa.
Terminal Railway Assoeiation of St. Louis, (2)	St. Louis, Mo.
Texas Company,	Lockport, Ill.
Touraine Company,	New Hartford, Conn.
United States Capitol Power Plant,	Washington, D. C.
United States Navy Department, (2)	Washington, D. C.
University Club,	New York, N. Y.
Utah Light & Railway Company, (2)	Salt Lake City, Utah
Vanderlip, F. A., Sidell Tilghman and E. P. Swenson, Syndicate Managers,	New York, N. Y.
Vesper Country Club,	Lowell, Mass.
Wabash-Pittsburg Terminal R. R. Co.,	Pittsburgh, Pa.
Western Construction Co.,	Davenport, Iowa
Westinghouse Air Brake Company,	Wilmerding, Pa.
Westinghouse Electric and Manufacturing Company,	Newark, N. J.
Westinghouse Lamp Company,	Bloomfield, N. J.
Westinghouse Machine Company, (2)	Pittsburgh, Pa.
Wheeling & Lake Erie R. R. Co., (2)	Brewster, O.
White Sulphur Springs, Incorporated,	White Sulphur, W. Va.
Wilkesbarre Lace Manufacturing Company, (2)	Wilkesbarre, Pa.
Williamson Bros. Company,	Philadelphia, Pa.
Worcester Electric Light Company,	Worcester, Mass.

WESTINGHOUSE CHURCH KERR & CO.

ENGINEERS AND CONSTRUCTORS

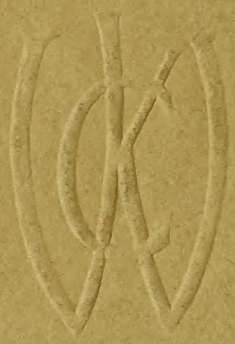
General Offices: NEW YORK, 37 WALL STREET

BOSTON,	BOARD OF TRADE BUILDING
CHICAGO,	NEW YORK LIFE BUILDING
LOS ANGELES,	PACIFIC ELECTRIC BUILDING
SAN FRANCISCO,	PACIFIC BUILDING
MONTREAL,	SHAUGHNESSY BUILDING
VANCOUVER,	METROPOLITAN BUILDING
WINNIPEG,	CONFEDERATION LIFE BUILDING

In addition to the work described in this booklet, attention is invited to the great variety of other work which the Company has undertaken or is prepared to undertake and which includes: Consulting and Constructive Engineering for

Railroad Shops	Hotels
Wharves and Docks	Electric Railways
Central Power Plants	Transmission Lines
Passenger and	Hydro-Electric Plants
Freight Terminals	Steam R. R. Electrification

WESTINGHOUSE CHURCH KERR & CO.



ENGINEERS
CONSTRUCTORS

NEW YORK